



## Junior

## Animal Sciences

### Recognition

**Students Name(s):** Johnie Hanley  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** Red Tailed Sharks Response To Shark Deterrents

**Students Name(s):** Ethan J Landreville  
**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal  
**Title:** The Effects of Hurricanes on Migrating Warblers: a Case of Small Birds Falling Out of The Sky

### Honorable Mention

**Students Name(s):** Sierra Beal  
**School:** Carwise Middle School, **Region:** Pinellas  
**Title:** Effect of Different Species of Milkweed on Monarch Transformation

### Fourth Place

**Students Name(s):** Henry Merritt  
**School:** Beulah Middle School , **Region:** West Panhandle  
**Title:** Superworm Supereater

**Students Name(s):** Kinley McCaw  
**School:** Dr. Mona Jain Middle School, **Region:** Manatee STEM Competition  
**Title:** How Is The Longevity of Drosophila melanogaster Impacted By Branched-Chain Amino Acid Consumption?

### Third Place

**Students Name(s):** Arya S Kulkarni  
**School:** West Shore Junior/Senior High School, **Region:** Brevard: South  
**Title:** Which Home Found Remedy Kills *Amoeba proteus*?

**Students Name(s):** Ella K Drapeau  
**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal  
**Title:** The Future of Pelican Island as a Sanctuary for *Pelecanus occidentalis*

**Students Name(s):** Kira Lawless  
**School:** Saint Joseph Catholic School, **Region:** Martin  
**Title:** Poly Eliminatus Insecta

### Second Place

**Students Name(s):** Cameron Nikole Klopfer  
**School:** A.D. Henderson University School, **Region:** Palm Beach  
**Title:** Beneath the Surface: Exploring How Angles in Shark Vertebrae Contribute to Aquatic Locomotion

**Students Name(s):** Ivan A Kalashnykov  
**School:** American Heritage School, Plantation, **Region:** Broward  
**Title:** Assessing Clove's (*Syzygium aromaticum*) Neuroprotective Qualities in Zebrafish Embryos Induced with 6-Hydroxydopamine to Model Parkinson's Disease

### First Place

**Students Name(s):** Aakash Manaswi

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** A Novel Investigation Using Carbon Dioxide for *Varroa mites* Treatment in Honey Bee Colonies

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**Grand Award Winner**

**Students Name(s):** Aakash Manaswi

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** A Novel Investigation Using Carbon Dioxide for *Varroa mites* Treatment in Honey Bee Colonies

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## Junior

## Behavioral & Social Sciences

### Recognition

**Students Name(s):** Sebastian Lemke; Sylvia Lebron  
**School:** Dr. Mona Jain Middle School, **Region:** Manatee STEM Competition  
**Title:** Does Note Taking Affect Topic Recollection

**Students Name(s):** Ronald (Trey) E Sturm; Dylan R Morrison  
**School:** Ascension Catholic School, **Region:** Brevard: Mainland  
**Title:** Time: The Ultimate Study Guide

### Honorable Mention

**Students Name(s):** Ahana A Gonwar  
**School:** West Shore Junior/Senior High School, **Region:** Brevard: South  
**Title:** How Do Different Types of Brain-Stimulating Games Help Cure Memory and Social Skills

**Students Name(s):** Christos Glynatsis; Rhett Skelton  
**School:** Carwise Middle School, **Region:** Pinellas  
**Title:** Music for Thought: The Effects of Music Genres on the Brain

### Fourth Place

**Students Name(s):** Olivia Miller  
**School:** Holley Navarre Middle School, **Region:** West Panhandle  
**Title:** Illusions through the Ages!

### Third Place

**Students Name(s):** Prerona Sarkar  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** Does Spatial Visualization Help Improve Mathematical Ability? - an AI Approach

**Students Name(s):** Ellie M Morrissey  
**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal  
**Title:** The Effect of Music Tempo on Memory in Children with Autism

**Students Name(s):** Emi Optekar  
**School:** NSU University School, **Region:** Broward  
**Title:** Can Improv Be Used to Improve Creativity and Divergent Thinking?

### Second Place

**Students Name(s):** Rowan Fedorka  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** The Impact of Artificial Intelligence on Middle School Education

**Students Name(s):** Nikol Tsiros  
**School:** Archimedean Middle Conservatory, **Region:** South Florida  
**Title:** Picking into the Brain of Future Decision Makers/How New Technologies Calibrate the Brain and Determine our Attitudes.

### First Place

**Students Name(s):** Ayaan Patel

**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** What Is the Effect of Color on Memory for Ages 60+?

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## Junior

## Biomedical & Health Sciences

### Recognition

**Students Name(s):** Nigel Coleman

**School:** Elizabeth Cobb Middle School, **Region:** Capital

**Title:** Are You Really Protected While You Are Having Fun in the Sun?

**Students Name(s):** Nitin Kurup

**School:** Williams Middle Magnet School, **Region:** Hillsborough

**Title:** Broken Hearted? Evaluating the Chance for Heart Disease

**Students Name(s):** Ayah Murtada

**School:** Alazhar School, **Region:** Broward

**Title:** Preventing Infection: Increasing Circulation in Diabetic Wounds

### Honorable Mention

**Students Name(s):** Carlos Cosme Smith; Jacobo Gutierrez

**School:** Treasure Village Montessori School, **Region:** Monroe

**Title:** Sports, Calories, Science

**Students Name(s):** Karam Abedshakour Hamadadneh

**School:** Alazhar School, **Region:** Broward

**Title:** The Effect of the Chemicals in Common Food Items on *Daphnia magna*

**Students Name(s):** Elena Centeno

**School:** Charlotte Preparatory School, **Region:** Thomas Alva Edison

**Title:** How Effective Is Your Sunscreen?

### Fourth Place

**Students Name(s):** Riya Reddy

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** The Effect of Moringa Oleifera Leaf Extract on the Proliferation of *Saccharomyces cerevisiae* (baker's yeast).

**Students Name(s):** Arshiya Ghosh

**School:** Starkey Ranch K-8, **Region:** Pasco

**Title:** An Ayurvedic Approach to Aortic Stenosis

**Students Name(s):** Layan Lili Abuelhommos

**School:** Alazhar School, **Region:** Broward

**Title:** The Effect of Smoking and Vaping on *Daphnia* and *Daphnia* Embryos

**Students Name(s):** Zachary Harshman

**School:** Sarasota School of Arts and Sciences, **Region:** Sarasota

**Title:** The Effect of Temperature on a Hydrogel on Degradation Rate for use in a Drug Delivery System?

**Students Name(s):** Penelope Serantes

**School:** Mariner Middle School, **Region:** Thomas Alva Edison

**Title:** The Best Pad. Period...

**Third Place**

**Students Name(s):** Oliver Schwartz

**School:** Pine Ridge Middle School, **Region:** Collier

**Title:** Enhancing Durability Through Stitching: An Investigation into Various Sutures Techniques

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**Students Name(s):** Mahi Patel

**School:** Liberty Middle School, **Region:** Hillsborough

**Title:** Spatial Analysis of T-Cell Infiltration in Orthotopic Bladder Tumors: Evaluating Hypoxia's Impact Through Digitalized Histology Images

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**Students Name(s):** Sarah Larche

**School:** International Community School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Wipeout Allergens: An Examination of Best Cleaning Practices

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**Second Place**

**Students Name(s):** Lilia Andrea Shalaurov

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effect of *Ocimum sanctum* Linn on Blood Pressure Levels with *Daphnia magna*

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**Students Name(s):** Lily Fletcher

**School:** Pine Ridge Middle School, **Region:** Collier

**Title:** Regenerating Planaria with Different LED Lights

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**First Place**

**Students Name(s):** Anik Sahai

**School:** A.D. Henderson University School, **Region:** Palm Beach

**Title:** Eye Don't Lie: A Visual Diagnosis for Diabetic Retinopathy

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## Junior

## Cellular/Molecular Biology & Biochemistry

### Recognition

**Students Name(s):** Ishaan Mauskar

**School:** George Washington Carver Middle School, **Region:** South Florida

**Title:** No Stain, No Gain

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**Students Name(s):** Maria Travisano

**School:** Bonita Springs Middle School Center for the Arts, **Region:** Thomas Alva Edison

**Title:** Power in Planaria

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### Honorable Mention

**Students Name(s):** Preston T Kennedy

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Investigating the Chemical and pH Effect of Photosynthesis Output of *Scenedesmus quadricauda* via Sodium Bicarbonate

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### Fourth Place

**Students Name(s):** Uma Q. Crisafulli

**School:** Gifford Middle School, **Region:** Indian River

**Title:** The Efficiency of Energy Density in Various Water Content Biofuels

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**Students Name(s):** Zara Sheikh

**School:** Selah Tawfik, **Region:** Broward

**Title:** The Effects of Azo Dyes on the Anxiogenic Behavior and Habitual Memory of Planaria Worms

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### Third Place

**Students Name(s):** Ben Liu

**School:** A.D. Henderson University School, **Region:** Palm Beach

**Title:** Extension of Life: Investigating the Effects of Astragalus on the Lifespan of *Drosophila melanogaster*

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### Second Place

**Students Name(s):** Malak Yehai Salem

**School:** Leaders Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** How Does the pH Affect the Activity of the Trypsin in Terms of Reaction Rate and Efficiency?

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### First Place

**Students Name(s):** Sarah Schurer

**School:** George Washington Carver Middle School, **Region:** South Florida

**Title:** Predicting POI and E3 Ligase Complexes Using Alpha Fold Multimer

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## Junior

## Chemistry

### Recognition

**Students Name(s):** Ella Belvedere Winogradsky  
**School:** Sanderlin K-8 IB World School, **Region:** Pinellas  
**Title:** Spherification in Medicine

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**Students Name(s):** Jaylyn B. Contento  
**School:** Okaloosa STEMM Academy, **Region:** East Panhandle  
**Title:** Filtering Water - Featuring: Graphene

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**Students Name(s):** Phoenix Krier  
**School:** Samuel S. Gaines Academy, **Region:** St. Lucie  
**Title:** Which Filtration Works Best on City Water?

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### Honorable Mention

**Students Name(s):** Mattison Phillips  
**School:** Ridgeview Global Studies Academy, **Region:** Polk  
**Title:** How Dark Beverages Affect the Color of Your Teeth

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**Students Name(s):** Ally Kline  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Which AA Battery Brand Lasts the Longest?

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**Students Name(s):** Tala Hnaihen  
**School:** Leaders Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Micro Charge

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### Fourth Place

**Students Name(s):** Colin Michael Sullivan  
**School:** Polo Park Middle School, **Region:** Palm Beach  
**Title:** Explosive Sweets!

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**Students Name(s):** Richard Wilderman  
**School:** St. Paul's Catholic School, **Region:** West Panhandle  
**Title:** Acidic and Alkaline: The Effect of pH Levels on Fruit

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**Students Name(s):** Layla Turner  
**School:** Charlotte Preparatory School, **Region:** Thomas Alva Edison  
**Title:** Is Your Water Contaminated? City vs Well

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**Students Name(s):** Brian George Wang  
**School:** Hidden Oaks Middle School, **Region:** Martin  
**Title:** Where Are You, Vitamin C?

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### Third Place



**Students Name(s):** Eva Golian  
**School:** Oakridge Middle School, **Region:** Collier  
**Title:** Thermal Shield for Hair: A Test of Protection Sprays

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**Students Name(s):** Abigail Byrne  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Detergent Designs

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**Students Name(s):** Grady Wildt  
**School:** Seven Springs Middle School, **Region:** Pasco  
**Title:** Water 2 Fuel

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#### **Second Place**

**Students Name(s):** Caroline C. Cornell  
**School:** Hardee Junior High School, **Region:** Heartland  
**Title:** Do Surfactants Increase Coverage of Spray Applications on Young Citrus Trees in Individual Protective Coverings (IPC)?

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**Students Name(s):** Alyssa Liu; Andrew Sareh  
**School:** Paul Laurence Dunbar Middle School, **Region:** Thomas Alva Edison  
**Title:** Green Hydrogen

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#### **First Place**

**Students Name(s):** Aiden Xu  
**School:** Sanford Middle School, **Region:** Seminole  
**Title:** AI-assisted Mosquito Repellent Solution Invention and Experiment Validation

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#### **Grand Award Winner**

**Students Name(s):** Aiden Xu  
**School:** Sanford Middle School, **Region:** Seminole  
**Title:** AI-assisted Mosquito Repellent Solution Invention and Experiment Validation

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## Junior

## Earth & Environmental Sciences

### Recognition

**Students Name(s):** Lindsey A Brown

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** Novel Residential Insulation Systems

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**Students Name(s):** Cassis H Kroll

**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal

**Title:** The Effect of Fertilizer Runoff on Pyrocystis

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**Students Name(s):** Saksham Batra

**School:** Dr. John Long Middle School, **Region:** Pasco

**Title:** Can Liquid Magnets Save the Ocean?

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**Students Name(s):** Jack Scopellite; Gavin Starling

**School:** Fort White High School, **Region:** Suwannee Valley

**Title:** In Search of Radon Gas

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**Students Name(s):** Olivia Ada Gulsoy

**School:** Lake Eola Charter School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Making Tea Waste Into Eco-Energy

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### Honorable Mention

**Students Name(s):** Elisabeth Collins

**School:** Ransom Middle School, **Region:** West Panhandle

**Title:** Of Monarchs and Milkweed

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**Students Name(s):** Nikhil John Pasupuleti

**School:** Lecanto Middle School, **Region:** Citrus

**Title:** Lettuce Talk Hydroponics

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**Students Name(s):** Makenna C. Nolte

**School:** Yearling Middle School, **Region:** Heartland

**Title:** Does Prescribed Burning Have an Effect on Lovebugs?

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**Students Name(s):** Nadia Fagien

**School:** Alazhar School, **Region:** Broward

**Title:** The Effect of Sodium Laureth Sulfate on Aquatic Life

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**Students Name(s):** Beatriz Y Assano

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** The Effects of Population in Different Cities' Tap Water on the Amount of Microplastics

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### Fourth Place

**Students Name(s):** Kaysha K Patel

**School:** David C. Hinson Middle School, **Region:** Tomoka

**Title:** How Much Focculant is Needed to Reduce the Total Suspended Solids in Murky Water from the Tomoka River?

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**Students Name(s):** Kate Hurford  
**School:** Landrum Middle School, **Region:** St. Johns  
**Title:** Analyzing the Effects of Aeration on Retention Pond Water Quality

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**Students Name(s):** Riley O Law  
**School:** Wildwood Middle High School, **Region:** Big Springs  
**Title:** Flip the Norm

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**Students Name(s):** Medha Konda; Bleakley Shettle  
**School:** Maclay School, **Region:** Capital  
**Title:** Testing Sustainable Alternatives to Plastic

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**Students Name(s):** Delaney K Hermes; Maxwell W Cope  
**School:** Space Coast Jr/Sr High School, **Region:** Brevard: Mainland  
**Title:** A Clearer Solution: Which Subtype of Iron Oxide (Fe<sub>2</sub>O<sub>3</sub>) Removes the Highest Concentration of Nanoparticles from Polluted Water?

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**Students Name(s):** Sophia L Fatteh-Patil  
**School:** Alazhar School, **Region:** Broward  
**Title:** The Impact of the Addition of a Living Roof on the Absorption of Heat with Different Colored Concrete Roof Tiles

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### Third Place

**Students Name(s):** Aarush Balakrishnan  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** Effectivity of Carbon Filters on Capturing Gaseous Fumes

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**Students Name(s):** Sahil Patel  
**School:** Martinez Middle School, **Region:** Hillsborough  
**Title:** Flourishing Soil Microbiota - The Impact of Fertilizers

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**Students Name(s):** Tasnim Hicham Mabchour  
**School:** Alazhar School, **Region:** Broward  
**Title:** The Effect of Natural Solutions on the Heart Rate and Survival Rate of *Daphnia magna* after being affected by an Environmental Pollutant

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**Students Name(s):** Scarlett R Asselta  
**School:** American Heritage School, Plantation, **Region:** Broward  
**Title:** The Effect of Adenosine Triphosphate on *Tenebrio molitor* Polystyrene Consumption

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**Students Name(s):** Eliana T Brody  
**School:** Apollo Middle School, **Region:** Broward  
**Title:** What Puts the Meal in Mealworm? An Experiment of Plastic Eating Worms

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### Second Place

**Students Name(s):** Luke William Bourns  
**School:** The Weiss School, **Region:** Palm Beach  
**Title:** Is CFRP a Viable Material for Hurricane Shutters?

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**Students Name(s):** Hyewon Kim  
**School:** Lawton Chiles Middle School, **Region:** Seminole  
**Title:** Soaking In The Hardships of Farming and Extreme Climate!

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**Students Name(s):** Taylor Pennington Thomason

**School:** Sugarloaf School, **Region:** Monroe

**Title:** The Environmental Cost of Convenience: How Polyethylene Plastics Contribute to Ocean Acidification and Affect Marine Life

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**Students Name(s):** Colton J Poppe

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** The Effects of Different Plant Extracts on the Removal of Microplastics from Salt Water

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**First Place**

**Students Name(s):** Lenny Hanisko

**School:** Don Estridge High Tech Middle School, **Region:** Palm Beach

**Title:** The Carbon Blues: Sequestering CO2 with Submerged Aquatic Vegetation (SAV) through Blue Carbon Farming

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**Students Name(s):** Ariana S. Bolton

**School:** Storm Grove Middle School, **Region:** Indian River

**Title:** Global Warning! The Effects of CO2 on Temperature and the Development of a Standardized Unit of Measurement to Compare Climate Change Solutions

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## Junior

## Engineering

### Recognition

**Students Name(s):** Paxton Makai Cava; Benjamin Edward Slive

**School:** A.D. Henderson University School, **Region:** Palm Beach

**Title:** Aerial Access: Building a Drone Prototype for Seed Dispersal over Inaccessible Terrain

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**Students Name(s):** Parks Meadow Dunn

**School:** Plantation Key School, **Region:** Monroe

**Title:** Electromagnetic Mass Driver

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**Students Name(s):** Jeronimo Marulanda Echever

**School:** Kids Community College Southeast Middle School, **Region:** Hillsborough

**Title:** Aerodynamics of a Paper Airplane

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**Students Name(s):** Caden J. Crawley

**School:** Okaloosa STEMM Academy, **Region:** East Panhandle

**Title:** The Perfect Propeller: The Effect of Drone Propeller Shape on Weight the Drone Can Carry

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### Honorable Mention

**Students Name(s):** Pranav Mannam; Jaganesh Ramkrishnan; Gavin Xie

**School:** Abraham Lincoln Middle School, **Region:** Alachua

**Title:** The Relationship between Length and Lift

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**Students Name(s):** Christopher G. Nicoloff

**School:** Okaloosa STEMM Academy, **Region:** East Panhandle

**Title:** Telescope Tracking

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**Students Name(s):** Georgianna Hlewicki

**School:** Westgate K-8 School, **Region:** St. Lucie

**Title:** Arm You Ready?

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### Fourth Place

**Students Name(s):** Henry M Pennington

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** How do Different Bladed Propellers Affect a Drone's Performance

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**Students Name(s):** Caesin Ray McShane Davis

**School:** Teague Middle School, **Region:** Seminole

**Title:** Can a supersonic compression electric jet engine be the future of propulsion systems?

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**Students Name(s):** Johnny Powers

**School:** Starkey Ranch K-8, **Region:** Pasco

**Title:** Pool System Hydroelectric Production

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**Students Name(s):** Ethan Sheckler

**School:** Umatilla Middle School, **Region:** Lake

**Title:** Another Life Saved

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**Students Name(s):** Dhira Sharma

**School:** Canterbury School, **Region:** Thomas Alva Edison

**Title:** Aerodynamic Explorations: Unveiling the Efficiency of Varied Airfoil Designs in Wind Tunnel

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**Third Place**

**Students Name(s):** Randall Quinones

**School:** Centennial Middle School, **Region:** Pasco

**Title:** Custom Phone App

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**Students Name(s):** Aarav Patel; Chelsea Lawson

**School:** Eustis Middle School, **Region:** Lake

**Title:** Trash Collecting RC Boat

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**Students Name(s):** Anishka Sharma

**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Centrifuge

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**Students Name(s):** Ethan Timmerman; Matthew Jarrell

**School:** Stuart Middle School, **Region:** Martin

**Title:** Aerodynamics of Airfoils in a Wind Tunnel

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**Second Place**

**Students Name(s):** Genevieve Johnson

**School:** Boca Raton Christian School, **Region:** Palm Beach

**Title:** Surface Area Optimization: A Study in Energy Savings

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**Students Name(s):** Megha Sandrapaty

**School:** Osceola Middle School, Ocala, **Region:** Big Springs

**Title:** Optimizing the Design of a Piezoelectric Hydrophone for Best Underwater Detection

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**Students Name(s):** Averi B Bourgoin

**School:** DeLaura Middle School, **Region:** Brevard: Intracoastal

**Title:** Knock Knock! Lock

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**First Place**

**Students Name(s):** Adia Agarwal

**School:** Bak Middle School of the Arts, **Region:** Palm Beach

**Title:** Investigating the Efficiency of the Hydrogen Energy Cycle

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**Students Name(s):** Lilly A Downs

**School:** Galaxy Middle School, **Region:** Tomoka

**Title:** What Is the Optimal Number of Magnets for an Ocean Wave Electricity Generator to Produce the Peak Voltage?

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## Junior

## Environmental Engineering

### Recognition

**Students Name(s):** Thai Durham

**School:** Maritime and Science Technology Academy, **Region:** South Florida

**Title:** Living Bricks

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**Students Name(s):** Elijah R Pyle

**School:** Saint John Lutheran School, **Region:** Big Springs

**Title:** What Blade Ends Are most Efficient for Water Turbine Design?

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**Students Name(s):** Ella M Delgado

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** The Effect of Different Types of Algae on Biotextiles Elasticity

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### Honorable Mention

**Students Name(s):** Juanita Gomez

**School:** Dr. Mona Jain Middle School, **Region:** Manatee STEM Competition

**Title:** Biodegradable Hydrogels Can Help to Conserve Water in Farming

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**Students Name(s):** Nevaeh Hernandez

**School:** Sanford Middle School, **Region:** Seminole

**Title:** Sea Erosion Barrier

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**Students Name(s):** Joseph B McSoley

**School:** Trinity Catholic School, **Region:** Capital

**Title:** How Efficient Are Water Filtration Systems?

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### Fourth Place

**Students Name(s):** Moira K. Reyenga

**School:** Okaloosa STEMM Academy, **Region:** East Panhandle

**Title:** Biorock

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**Students Name(s):** Elliana McKenzie Lovatt

**School:** Stuart Middle School, **Region:** Martin

**Title:** St. Lucie Inlet Sand Deposition 2nd Year

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**Students Name(s):** Samuel Calhoun

**School:** Saint Joseph Catholic School, **Region:** Martin

**Title:** The Power of Water

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### Third Place

**Students Name(s):** Sankeerth R Kesireddy

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Container for Growing Plants with Soil in a Microgravity Environment.

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**Students Name(s):** Evan N Mellor

**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal

**Title:** A Cellulose NanoFibril Water Filtration System

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**Students Name(s):** Maggie Gao

**School:** Abraham Lincoln Middle School, **Region:** Alachua

**Title:** Removal of Lead from Water by Phosphate Modified Biochar

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**Second Place**

**Students Name(s):** Mithra Vasanthan

**School:** Julia Landon College Preparatory Middle School, **Region:** Northeast Florida

**Title:** Oil Spills: Finding Efficient Methods for Cleanup and Their Effect on the Aquatic Ecosystem

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**Students Name(s):** Aarit Dixit

**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** The Solar-Powered Irrigation System

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**First Place**

**Students Name(s):** Aiden Kirkley

**School:** Angeline Academy of Innovation, **Region:** Pasco

**Title:** Locating a Fire: Remote Sensing Towers Year 2

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## Junior Intelligent Machines, Robotics, & Systems Software

### Recognition

**Students Name(s):** Nikit Chitteti

**School:** Fruit Cove Middle School, **Region:** St. Johns

**Title:** Scanscription-An App that Scans Prescriptions to Create Reminders

**Students Name(s):** Elena R. Henderson

**School:** Okaloosa STEMM Academy, **Region:** East Panhandle

**Title:** How Do You Make and Program a Robot to Avoid Obstacles?

### Honorable Mention

**Students Name(s):** Keerthi K Patsamatla

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Designing a Novel Medicine Tracking System utilizing App-Integration to Enhance Health Monitoring for Patients with Cognitive Impairments

**Students Name(s):** Ankan Das

**School:** Sanford Middle School, **Region:** Seminole

**Title:** An Intelligent Walking Robot with Automated Actuation and Sensing for Surveillance and Space Exploration

### Fourth Place

**Students Name(s):** Benicio Montebugnoli

**School:** Neptune Middle School, **Region:** Osceola

**Title:** Intelligent Moneymaking

### Third Place

**Students Name(s):** Andrew Laurore

**School:** Gulf Coast Charter Academy South, **Region:** Collier

**Title:** Identification of Brain-Eating Amoeba Using Deep Learning

**Students Name(s):** Chinmay Gujar

**School:** Williams Middle Magnet School, **Region:** Hillsborough

**Title:** SignSwift: Using AI Visual Recognition For Optimal ASL Translation Efficiency

**Students Name(s):** Abigail Merchant

**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** A Novel Approach for Epileptic Seizure Prediction Using an Artificial Intelligence (AI) and Machine Learning (ML) Algorithm Augmented Brain Computer Interface (BCI) and Electroencephalography (EEG) Data - Year 2

### Second Place

**Students Name(s):** Dylan Michael Kiesling

**School:** The Greene School, **Region:** Palm Beach

**Title:** VisionaryBot: Bridging Python and Object Detection Algorithm for Intelligent Robotics

**Students Name(s):** Adrian Jose Alvarez

**School:** Lockhart Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Year 1: Designing a Plant Disease Suppression Robot

### First Place

**Students Name(s):** Viktoriia Galushchak

**School:** St. Paul's Catholic School - Riverside, **Region:** Northeast Florida

**Title:** Adoption of Computer Vision to Create Interactive Learning Experiences

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**Grand Award Winner**

**Students Name(s):** Viktoriia Galushchak

**School:** St. Paul's Catholic School - Riverside, **Region:** Northeast Florida

**Title:** Adoption of Computer Vision to Create Interactive Learning Experiences

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## Junior

## Mathematics & Computational Sciences

### Recognition

**Students Name(s):** Pranshu Shah

**School:** Seven Springs Middle School, **Region:** Pasco

**Title:** Decoding Air Quality: Intense Data Analysis To Uncover Influential Factors Affecting Breathable Air

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**Students Name(s):** Lochlan Treadwell

**School:** St. Lucie West K-8 School, **Region:** St. Lucie

**Title:** AI Wars

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### Honorable Mention

**Students Name(s):** Noah Gutman

**School:** iPrep Academy North, **Region:** South Florida

**Title:** The Impact of Font Characteristics for Individuals with Dyslexia and ADHD: A Cluster Analysis Algorithm

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### Fourth Place

**Students Name(s):** Anya Rani Gupta

**School:** A.D. Henderson University School, **Region:** Palm Beach

**Title:** Machine Learning (ML) Model For Predicting E-Waste Toxicity [ML-PET]: Studying the Effect of Metallic Toxicants on *Daphnia magna*

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**Students Name(s):** Jace A. Lauer

**School:** Home-School, **Region:** Brevard: South

**Title:** A Novel Analysis of Fibonacci Sequences

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### Third Place

**Students Name(s):** Gauri Borkar

**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Stock Market: The Unpredictable

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### Second Place

**Students Name(s):** Nitesh Rampersad

**School:** Neptune Middle School, **Region:** Osceola

**Title:** Analyzing the Brocard-Ramanujan Problem

---

### First Place

**Students Name(s):** David Rong

**School:** Abraham Lincoln Middle School, **Region:** Alachua

**Title:** Mushroom Mystery: Edible or Not?

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## Junior

## Microbiology

### Recognition

**Students Name(s):** Maeve Cheshire  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Which Liquid Hand Soap Removes the most Bacteria?

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**Students Name(s):** Suditi Chandra  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** The Delicious Work of Bacteria

---

### Honorable Mention

**Students Name(s):** Alice R. Cheriton; Jacquelyn D. Perrin  
**School:** St. Edward's Middle School, **Region:** Indian River  
**Title:** How Does the Temperature of the Indian River Lagoon Affect the Oxygen Production Rate of Blue-Green Algae?

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### Fourth Place

**Students Name(s):** Harper G. Hall  
**School:** Sebastian River Middle School, **Region:** Indian River  
**Title:** Un"lock"ing River Bacteria Secrets

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**Students Name(s):** Gianna L. D'Elia  
**School:** Storm Grove Middle School, **Region:** Indian River  
**Title:** Evaluating Millipede Extracts for Antimicrobial Properties

---

### Third Place

**Students Name(s):** Gerardo Cardoso  
**School:** Wildwood Middle High School, **Region:** Big Springs  
**Title:** Does the Utilization of Raw Honey, Hot Honey, Garlic and Cayenne have any Effect on Bacterial Inhibition

---

**Students Name(s):** Mackenzie D Little  
**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal  
**Title:** Seagrapes as Our Savior!

---

### Second Place

**Students Name(s):** Christopher J Trinidad  
**School:** Saint Joseph Catholic School, **Region:** Northeast Florida  
**Title:** A Novel Approach to Combat Amebiasis: Testing Natural Solutions on *Paramecium multimicronucleatum*

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### First Place

**Students Name(s):** David Raguindin  
**School:** Pinecrest Academy Space Coast, **Region:** Brevard: Mainland  
**Title:** Battling Sepsis at the Source: Creating an Antimicrobial Solution to Be Used on Severe Burn Patients

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## Junior

## Physics & Astronomy

### Recognition

**Students Name(s):** Isaac S Dalton

**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal

**Title:** The Effect of Zinc and Aluminum Oxide Nanoparticles on Polycrystalline Solar Cells

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**Students Name(s):** Landon Edwards

**School:** Dayspring Academy Middle School, **Region:** Pasco

**Title:** Amazing Fuel Cells

---

**Students Name(s):** Khamil Alvarez Arroyo

**School:** Windy Hill Middle School, **Region:** Lake

**Title:** No Pressure!

---

**Students Name(s):** Daniel Jitari

**School:** Indian Ridge Middle School, **Region:** Broward

**Title:** The Impact of Boiling on Electrochemical Efficiency in a Potato Battery

---

### Honorable Mention

**Students Name(s):** Nathaniel C Cordes

**School:** The Villages Charter Middle School, **Region:** Big Springs

**Title:** What's the Point?

---

**Students Name(s):** Landon W Huber

**School:** Christ Classical Academy, **Region:** Capital

**Title:** Blocking EMFs: The Most Effective Shielding Materials

---

**Students Name(s):** Caleb Davis

**School:** Lake Butler Middle School, **Region:** Suwannee Valley

**Title:** A Little Bit Rusty

---

### Fourth Place

**Students Name(s):** Gabriel Hosein Mikati

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Testing the Efficacy of Nickel-Zinc Batteries in Picosatellites

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**Students Name(s):** Milo Westberry

**School:** Pine Ridge Middle School, **Region:** Collier

**Title:** Solar Saplings: Solar Tree Size Effect on Photovoltaic Output

---

**Students Name(s):** Ruishi Wang; Snehansh Nanda

**School:** Lawton Chiles Middle School, **Region:** Seminole

**Title:** How Does the Weight Distribution on a Train Affect its Stability?

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**Students Name(s):** Charlize Moghaddam

**School:** Abraham Lincoln Middle School, **Region:** Alachua

**Title:** The Impact of Thickness and Material on Heat Transfer

---

**Students Name(s):** Ivan Shorter  
**School:** Fort Clarke Middle School, **Region:** Alachua  
**Title:** The Physics of Roblox

---

**Third Place**

**Students Name(s):** Brendan Burns  
**School:** Pine Ridge Middle School, **Region:** Collier  
**Title:** Which Natural Plant-Based Dye Will Offer the Best Ultraviolet Protection from the Sun?

---

**Students Name(s):** Abhiti Maitra  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** A Novel Approach to Calculate Interstellar Distances with Precision by Applying Geometric Properties of a Square

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**Students Name(s):** Megan Riley Heter; Savannah Kay Watts  
**School:** Dundee Ridge Academy, **Region:** Polk  
**Title:** Run, Hide, Fight

---

**Students Name(s):** Ian W. Allen  
**School:** Okaloosa STEMM Academy, **Region:** East Panhandle  
**Title:** Shining bright: Exploration of Phosphorescent Materials under Different Conditions

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**Second Place**

**Students Name(s):** Abigail M Lightle  
**School:** The Cornerstone School, **Region:** Big Springs  
**Title:** Newtonian Orbital Simulation of the Terrestrial Planets

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**Students Name(s):** Ishanvi Sabniveesu  
**School:** Sunlake Academy of Math and Science, **Region:** Hillsborough  
**Title:** Detecting Impurities in Wine with Sound Pattern Analysis

---

**Students Name(s):** Emmalynn L Otzenberger  
**School:** Okaloosa STEMM Academy, **Region:** East Panhandle  
**Title:** Cooler House, Less Material

---

**First Place**

**Students Name(s):** Anishka Jindal  
**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Space Sprout Spectrum: Understanding Germination in Microgravity

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## Junior

## Plant Sciences

### Recognition

**Students Name(s):** Harold Hoffmann  
**School:** Community School, Naples, **Region:** Collier  
**Title:** Does the Coarseness of Hydrogels Affect Plant Growth?

**Students Name(s):** Sophia Hernandez-Rojas; Megan E Hunt  
**School:** South Sumter Middle School, **Region:** Big Springs  
**Title:** Lima Beans on the Rise

**Students Name(s):** Nolan Zapata  
**School:** Seven Springs Middle School, **Region:** Pasco  
**Title:** Plants in Space: At Home

**Students Name(s):** Madeline Virginia Tuma  
**School:** Hidden Oaks Middle School, **Region:** Martin  
**Title:** Lettuce Talk about Greenhouses

### Honorable Mention

**Students Name(s):** Laurel G. Ryan  
**School:** Osceola Middle School, **Region:** Heartland  
**Title:** Magnetic Miracle Gro!

**Students Name(s):** Dash E Figgins  
**School:** The Villages Charter Middle School, **Region:** Big Springs  
**Title:** Does the pH Level in Soil Affect its Plant Growth?

**Students Name(s):** Sonali Anderson  
**School:** Evangelical Christian School, **Region:** Thomas Alva Edison  
**Title:** Liquid Gold: Picking the Perfect Plant Hydration

### Fourth Place

**Students Name(s):** Myles Brennan-Kocher Leazott  
**School:** Saint John Paul II Catholic School, **Region:** Citrus  
**Title:** Martian Munchies: The "Poo-tential" of Biosolids in Space Farming

**Students Name(s):** Mary Farag  
**School:** Seven Springs Middle School, **Region:** Pasco  
**Title:** Increasing the Effects of Carbon Capture in *Dracaena sanderiana* by Increasing Efficiency of Ribulose-1

**Students Name(s):** Joseph Deming; Luke McKinney  
**School:** Fort White High School, **Region:** Suwannee Valley  
**Title:** Plant Growth and Light Wavelength

**Students Name(s):** Anya Bollineni  
**School:** Orlando Science Middle School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** How Do Salinity Levels Impact Plant Growth?

**Students Name(s):** Mallory Mizell  
**School:** Charlotte Preparatory School, **Region:** Thomas Alva Edison  
**Title:** Effect of Salt in Water on Plant Health

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### Third Place

**Students Name(s):** Claudia G Miranda  
**School:** West Shore Junior/Senior High School, **Region:** Brevard: South  
**Title:** Will Pre-chilled Seeds Have a Higher Mortality Rate When Frozen Again?

---

**Students Name(s):** Lainey K. Johnson  
**School:** Hardee Junior High School, **Region:** Heartland  
**Title:** Does the pH Level in Soil Affect the Growth of *Imperata cylindrica* (Cogon grass)?

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**Students Name(s):** Jacob A Sokol; Olivia I. Sokol  
**School:** Wildwood Middle High School, **Region:** Big Springs  
**Title:** From Soil to Sponge: Harnessing the Power of Substances to Enhance Water Retention

---

**Students Name(s):** Aradhya Kasala  
**School:** Howard Bishop Middle School, **Region:** Alachua  
**Title:**

Global Microplastic Pollution - The Emerging Health Crisis: The Ecotoxicological Effects of Microplastics on Aquatic Organisms and Translating to Humans via A.I. Machine Learning and A Novel Low-Cost Water Filtration System

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### Second Place

**Students Name(s):** Gabriella Sophia Sagebien  
**School:** The Weiss School, **Region:** Palm Beach  
**Title:** Do Different Substrate Materials Affect the Growth of Plants in Microgravity Climates?

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**Students Name(s):** Emma Norena  
**School:** Jackson Heights Middle School, **Region:** Seminole  
**Title:** How Different Colors of LED Lights Affect the Growth of *Viola tricolor* var. *hortensis*

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**Students Name(s):** Wesley P Kettering  
**School:** Hoover Middle School,, **Region:** Brevard: Intracoastal  
**Title:** Comparing the Effects of Hydrogel and Hydroponics on the Growth of *Lactuca sativa*

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### First Place

**Students Name(s):** Steven Goodman  
**School:** Milwee Middle School, **Region:** Seminole  
**Title:** The Impacts of Gravitropism & Phototropism on Plant Growth

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### Grand Award Winner

**Students Name(s):** Steven Goodman  
**School:** Milwee Middle School, **Region:** Seminole  
**Title:** The Impacts of Gravitropism & Phototropism on Plant Growth

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## Senior

## Animal Sciences

### Recognition

**Students Name(s):** Victoria Marie Krupica

**School:** Oviedo High School, **Region:** Seminole

**Title:** From Canopies to Crypts: an Ecological Survey of Zombie Ant Cadavers in the Little Big Econ State Forest

---

**Students Name(s):** Sophia Rubiano

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Paraben Impact on Fruit Flies' Reproductivity

---

**Students Name(s):** Aiden Wright

**School:** Satellite High School,, **Region:** Brevard: Mainland

**Title:** The Effectiveness of Superoxide Dismutase BAP1 Mutated *Caenorhabditis elegans* Year: III

### Honorable Mention

**Students Name(s):** Sanvi Shankar

**School:** Florida Atlantic University High School, **Region:** Palm Beach

**Title:** Soaring Impact: Investigating the Influence of Air Pressure on *Drosophila melanogaster* Behavior and Reproduction Rate

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**Students Name(s):** Kadie Mariano

**School:** Wildwood Middle High School, **Region:** Big Springs

**Title:** Male *Aedes aegypti*: Biotic Effects of Chilling Associated with an SIT Program

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**Students Name(s):** Sana Shukkoor Mannuthoduvil

**School:** Tavares High School, **Region:** Lake

**Title:** Effects of Holistic Drugs as Adderall Replacements for ADHD Treatment

### Fourth Place

**Students Name(s):** Delaney Peterson

**School:** Belleview High School, **Region:** Big Springs

**Title:** Effect of Aggregate Size on Oyster Spat Recruitment

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**Students Name(s):** Lilly J McCoy

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Locomotor Effects of *Rhodiola rosea* Supplement on Parkinson's *D. melanogaster*

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**Students Name(s):** Gwendolyn Pender

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Developing a Novel Incubation System to Protect the Giant Swallowtail Life Cycle from Florida Carpenter Ant Predation

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**Students Name(s):** Gloria Gilliam

**School:** Branford High School, **Region:** Suwannee Valley

**Title:** How Do Moon Phases Affect Calving Rates in Dairy Cattle? Part 2

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**Students Name(s):** Nina Goyal

**School:** Martin County High School, **Region:** Martin

**Title:** Control of Fall Armyworm, a Global Pest, Using RNA interference and Antisense Oligonucleotides

**Third Place**

**Students Name(s):** Kasey Tiffany Moore

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effect of *Uncaria tomentosa* (Cat's Claw) in Locomotion of *Caenorhabditis elegans* Transgenic Strain NL5901 and its Potential Association with Alpha Synuclein Aggregation in an Animal Model of Parkinson's Disease

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**Students Name(s):** Grace T Massey

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** The Effects of Combining Different Vitamins with Antihistamine on Planaria Regeneration

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**Students Name(s):** Alex J Warren

**School:** Melbourne High School,, **Region:** Brevard: Mainland

**Title:** Using an Artificially Mixed Zooxanthellae Solution to Negate the Stress of *Xenia elongata*

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**Second Place**

**Students Name(s):** Lahari Challa

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Elucidating the Impact of *Lactobacillus casei* ATCC 393 on Amyloid Plaque Generation in Alzheimer's Model *Caenorhabditis elegans* GRU102

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**Students Name(s):** Aayushi Ranjan

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Analyzing the Effects of Curcumin and Turmeric on the Accumulation of Tau Amyloid Protein and its Further Implications into Alzheimer's Disease

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**First Place**

**Students Name(s):** Atreya Manaswi

**School:** Orlando Science High School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Year 5: Engineering a Novel IoT Trapping System with a Multiple Linear Regression Model Towards Eco-Friendly, High-Efficacy, Low-Cost Honey Bee Pest Treatment and Management

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**Grand Award Winner**

**Students Name(s):** Atreya Manaswi

**School:** Orlando Science High School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Year 5: Engineering a Novel IoT Trapping System with a Multiple Linear Regression Model Towards Eco-Friendly, High-Efficacy, Low-Cost Honey Bee Pest Treatment and Management

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## Senior

## Behavioral & Social Sciences

### Recognition

**Students Name(s):** Ashton T. Ponzo  
**School:** Okeechobee High School, **Region:** Heartland  
**Title:** Testing Chocolate?

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**Students Name(s):** Joshua G Inocencio  
**School:** Bishop Kenny High School, **Region:** Northeast Florida  
**Title:** The Effect of Second Guessing on Academic Performance

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### Honorable Mention

**Students Name(s):** Diya Jayesh Patel  
**School:** Lecanto High School, **Region:** Citrus  
**Title:** What Is the Correlation between CVD Death Rates and Universal Healthcare in 50 Countries in 2019?

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**Students Name(s):** Nadia J Cardoso  
**School:** Wildwood Middle High School, **Region:** Big Springs  
**Title:** Bilingual vs Monolingual: Who Has the Most Cognitive Control?

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### Fourth Place

**Students Name(s):** Dominic A Tosi  
**School:** Melbourne High School,, **Region:** Brevard: Mainland  
**Title:** Pedagogical Labyrinths: Deciphering the Enigma of Effective Instruction

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**Students Name(s):** Mehereen Chowdhury  
**School:** Canterbury School, **Region:** Thomas Alva Edison  
**Title:** A Novel Approach to the Effect of Bisphenol A on the Neurodevelopment of *Drosophila melanogaster* Larvae

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### Third Place

**Students Name(s):** Megan Hunsaker  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** Unlocking the Mind: Exploring the Cognitive Effects of 1.3D Fractals on Brain Activity and Emotions in Under 90 Seconds

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**Students Name(s):** Harris McIntyre Layson  
**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** The Effects of Guilt Induction When Negotiating with Hostile AI Agents Using the Interactive Arbitration Guide Online (IAGO) Program

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**Students Name(s):** Akshay Kumar  
**School:** American Heritage School, Plantation, **Region:** Broward  
**Title:** Use of Pueraria montana Extracts as Novel Treatments for the Dysfunctional Dopaminergic Neurons Seen in ADHD

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### Second Place

**Students Name(s):** Emma C Lee  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** Using Electroencephalogram and Neurofeedback Methodology as a Noninvasive Treatment for ADHD

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**Students Name(s):** Nira Goyal

**School:** Martin County High School, **Region:** Martin

**Title:** A Review of the Use and Promotability of Mental Health Apps by Teenagers

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**First Place**

**Students Name(s):** Rushil S Shah

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Understanding the Impact of Celebrity Endorsements on the Artificial Growth of Cryptocurrencies  
Using a Multi-Dimensional Latent Class Analysis and a Software Based Approach (Year 3)

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## Senior

## Biomedical & Health Sciences

### Recognition

**Students Name(s):** Maya Behura

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effect of Casein Kinase 2 Inhibitors on Anti-apoptotic Gene Expression in Acute Myeloid Leukemia Cells

**Students Name(s):** Maya Mohanty

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Utilizing *Caulobacter crescentus* to Target NOXA, BIM, and PUMA to Induce Apoptosis via Caspase-3 in Nasal Squamous Cell Carcinoma

**Students Name(s):** Jade Lubin

**School:** American Senior High School, **Region:** South Florida

**Title:** Impact of RagA and RagB on Osteoclastogenesis

**Students Name(s):** Mira Bhutani

**School:** Ponte Vedra High School, **Region:** St. Johns

**Title:** Sex Differences in Hypermobility Ehlers-Danlos Syndrome

**Students Name(s):** Prithish R Shan

**School:** Stanton College Preparatory School, **Region:** Northeast Florida

**Title:** Characterizing Novel Splicing for Clinical Prediction in ALS and FTLD Using Machine Learning

### Honorable Mention

**Students Name(s):** Dylan Nguyen

**School:** Alexander W. Dreyfoos School of the Arts, **Region:** Palm Beach

**Title:** High-Resolution Supersampling of BASP-ORCA Contrast Agents in Magnetic Resonance Imaging

**Students Name(s):** Jay C. Sullivan

**School:** St. Edward's High School, **Region:** Indian River

**Title:** Arthroscopic Grading System for Internal Impingement of the Shoulder

**Students Name(s):** Swathi Subramanian

**School:** Winter Springs High School, **Region:** Seminole

**Title:** Green Additive Manufacturing of Muscle Analogs (GAMMA)

**Students Name(s):** Kayla Washington

**School:** Treasure Coast High School, **Region:** St. Lucie

**Title:** Phage vs Affliction

**Students Name(s):** Ivan Yu; Deep Patel; Tyler Tocket

**School:** Fort Myers High School, **Region:** Thomas Alva Edison

**Title:** Leveraging Hyper-parameter Optimization in Multimodal Convolutional Neural Networks to Detect Skin Lesion Subtypes

### Fourth Place

**Students Name(s):** Janie Cai

**School:** Miami Palmetto Senior High School, **Region:** South Florida

**Title:** Machine Learning for Predicting Cancer Patients' Response to Immune Therapy Using Gene Expression Value

**Students Name(s):** Neelesh Pandey  
**School:** Gulliver Preparatory School, **Region:** South Florida  
**Title:** The Effect of Somatic Mutations in Glioblastoma Multiforme on Patient Survival

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**Students Name(s):** Trisha Chapagain  
**School:** Archimedean Upper Conservatory, **Region:** South Florida  
**Title:** Characterization of Exosomes Involved in Vascular Calcification Using Multifunctional Nanopipettes

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**Students Name(s):** Alan M Alwakeel  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** Introducing AIDx, The Physician's AI Copilot

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**Students Name(s):** Krish A Patel  
**School:** The Bolles School, **Region:** Northeast Florida  
**Title:** Evaluating Polycaprolactone to Deliver Nanovesicles from Biliary Stents as a Therapeutic against CCA

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**Students Name(s):** Abriham Gogineni; Pranav Verma  
**School:** Strawberry Crest High School, **Region:** Hillsborough  
**Title:** Multimodal Brain Pathology Assessment (MBPA): A Reinforcement Learning Approach

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### Third Place

**Students Name(s):** Carter Magnano  
**School:** Ponte Vedra High School, **Region:** St. Johns  
**Title:** The Role of Neuropilin-1 in Regulating Inflammation Following Ischemic Heart Injury

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**Students Name(s):** Suhani Gawde  
**School:** Maclay School, **Region:** Capital  
**Title:** Does E-cigarette Exposure during Pregnancy Affect GABA Neuron Migration?

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**Students Name(s):** Jonathan George  
**School:** James S. Rickards High School, **Region:** Capital  
**Title:** "Gut Feeling": Exploring *Lactobacillus reuteri* and its Potential Role in Alleviating Neuroinflammation in Alzheimer's Disease

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**Students Name(s):** Hanna J Zhang  
**School:** American Heritage School, Plantation, **Region:** Broward  
**Title:** The Effect of Intermittent Fasting on Immune Defense to Bacterial Infection in *Drosophila melanogaster*

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**Students Name(s):** Chloe Rhea  
**School:** Pine Crest School, **Region:** Broward  
**Title:** Analyzing Secreted PDZD2 as a Possible Therapeutic Agent for the Treatment of AML Using a Model of Premalignant Tet2 KO HSPCs

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### Second Place

**Students Name(s):** Erin Glenn  
**School:** Indian Rocks Christian School, **Region:** Pinellas  
**Title:** The Effectiveness of an Alternative Shunt Design: Year Two

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**Students Name(s):** Sarah Miller  
**School:** Satellite High School, **Region:** Brevard: Intracoastal  
**Title:** Creation of a Dystrophin Deficient Skeletal Muscle Cell Culture Model to Screen for Treatments for Duchenne Muscular Dystrophy

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**Students Name(s):** Shiven Sharma  
**School:** Eastside High School, **Region:** Alachua  
**Title:** Treating Aortic Diseases with Fish Oil Derivatives

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**Students Name(s):** Gracelynn R Beckham  
**School:** Clay High School, **Region:** Clay Rotary  
**Title:** An Evaluation of Potential Advances in Limb Immobilization for Orthopedic Healing

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**First Place**

**Students Name(s):** Dylan Wang  
**School:** Trinity Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange  
**Title:** Quantitative and Qualitative Analysis of a 22-base Pair Insertion in GBM EV NANOGP8 DNA in Different GBM Cell Lines

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**Students Name(s):** Jonah G Ferber  
**School:** Pine Crest School, **Region:** Broward  
**Title:** Discovery of rs887829 as the Genetic Polymorphism Responsible for Reduced UGT1A1 mRNA Expression in a Diverse Cohort

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## Senior

## Cellular/Molecular Biology & Biochemistry

### Recognition

**Students Name(s):** Madeleine Lile-Delfino

**School:** Countryside High School, **Region:** Pinellas

**Title:** Bioluminescence In Plants

**Students Name(s):** Shubhangi Maitra

**School:** Allen D. Nease High School, **Region:** St. Johns

**Title:** Decreased Levels of the Metabolite Nicotinamide Adenine Nucleotide (NAD) as a Driver of the Aging Process

**Students Name(s):** Simran Naval

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** Dual Drug Loaded Liposomal Nanoparticles To Target Metabolic Pathways Against NSCLC

### Honorable Mention

**Students Name(s):** Thien-Nhi A Nguyen

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** The Effect of Liposomes on Drug Delivery of Ascorbic Acid

**Students Name(s):** Luis Angel Villalobos; Krish Manoj Sejpal

**School:** Seminole High School, **Region:** Seminole

**Title:** Rosmarinic Acid Attenuates Malignant Phenotypes in vivo via DNMT1 Gene Pathway: Implications for Cancer Therapeutics

**Students Name(s):** Aleah Diaz

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Using Iron-Oxide Nanoparticles as a Novel Diagnosis Method for Endometriosis by Detecting Cytokine CA-125

### Fourth Place

**Students Name(s):** Samer Elhoushy

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effect of Adult Mesenchymal Stem Cells as a Novel Treatment of Rheumatoid Arthritis through Matrix Metalloproteinase Regulation by the TGF- $\beta$  Signaling Pathway

**Students Name(s):** Aoi Kanekiyo

**School:** Stanton College Preparatory School, **Region:** Northeast Florida

**Title:** Characterization of Apolipoprotein E Particles from Immortalized Astrocyte Cultures

**Students Name(s):** Christina Dovellos

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** The Effects of Mutated MPRIP On Glioblastoma Cell Shape, Migration, Growth, and Overall Invasiveness

**Students Name(s):** Claire Sun

**School:** Hillsborough High School, **Region:** Hillsborough

**Title:** Mitigation of Hypoxia-Induced Cell Death Through Inhibition of Protein Phosphatase 1 Regulatory Subunit 3G

**Students Name(s):** Megan D'Souza

**School:** Community School of Naples, **Region:** Thomas Alva Edison

**Title:** Revolutionizing Diabetes Care: Optimizing Hydrogel Beads for Pancreatic Islet Viability



**Third Place**

**Students Name(s):** Adhip Shankar Maitra

**School:** Oviedo High School, **Region:** Seminole

**Title:** Predicting the Severity of Human Coronavirus Strains through Computer Based Analysis of the Evolution of the Spike Protein

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**Students Name(s):** Syed Imtiaz Rob

**School:** Haines City High School IB East, **Region:** Polk

**Title:** Investigating Neurotransmitter Precursor Amino Acid Stability at Different Human Body Temperatures

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**Students Name(s):** Daniel Park

**School:** King High School, **Region:** Hillsborough

**Title:** Bioremediation Implications: A Novel Simulation of Perchlorate Docking with pcrABCD Proteins

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**Second Place**

**Students Name(s):** Sarah C Park

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** Establishing Disease Modeling of CADASIL using Human Induced Pluripotent Stem Cell-Derived Pericytes

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**Students Name(s):** Emilee Mangual

**School:** Satellite High School, **Region:** Brevard: Intracoastal

**Title:** NanoFusion: Revolutionizing CRISPR/Cas9 Delivery to MCF-7 Adenocarcinoma Via Exosome-Liposome Synergy

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**First Place**

**Students Name(s):** Emma M Colarte Delgado

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** Evaluating the Effect of Anti-inflammatory Sex Hormones to Model the Age and Gender Discrepancy in Alzheimer's Disease Using *C. elegans* as a Model Organism

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**Grand Award Winner**

**Students Name(s):** Emma M Colarte Delgado

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** Evaluating the Effect of Anti-inflammatory Sex Hormones to Model the Age and Gender Discrepancy in Alzheimer's Disease Using *C. elegans* as a Model Organism

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## Senior

## Chemistry

### Recognition

**Students Name(s):** Sarah Dabees

**School:** Aubrey Rogers High School, **Region:** Collier

**Title:** Electrolytic Water Splitting Process for the Mitigation of Ocean Acidification and the Harnessing of Hydrogen as a Fuel Source

**Students Name(s):** Aidan B Lacayo; Rebeca C Greco

**School:** Cypress Bay High School, **Region:** Broward

**Title:** A Novel Approach to Aqueous Nitrate Concentration Detection Using Chromotropes and UV-Visible Spectrophotometry

**Students Name(s):** Jack Vanden Heuvel

**School:** Sarasota High School, **Region:** Sarasota

**Title:** The Effects of Electroplating a Nickel Copper Layer onto a Photopolymer Resin 3D Print

### Honorable Mention

**Students Name(s):** Alexander L Ferland

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** Improving The Environmental Sustainability of Launchpad Structures by Understanding How Corrosion Rates of Common Structural Metals are Affected by Realistic Launchpad Environmental Conditions

**Students Name(s):** Sydney Ficks

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Optimization of the Ethylene Vinyl-Acetate (EVA) Dissolution Process for c-Si Model Solar Panels with Monocrystalline Cells

### Fourth Place

**Students Name(s):** Himank M Chhaya

**School:** James S. Rickards High School, **Region:** Capital

**Title:** Investigation of Kagome-Lattice Magnets of 4f and 3d Metals

**Students Name(s):** Isabella D Villano

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Propolis as a Hydrogel Sunscreen

**Students Name(s):** Wyatt Wrigley

**School:** Sarasota High School, **Region:** Sarasota

**Title:** Screening of Surface Soils for R.C.R.A. 8 Heavy Metal Concentrations in Varying Socioeconomic Status Census Tract Block Groups within the City of Sarasota, Florida

### Third Place

**Students Name(s):** Aishwarya Deshpande

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Developing a Polyethylene Glycol Hydrogel Based Controlled Delivery System Using the Alkyl Radical Initiator AIPH as an Antitumor Therapy

**Students Name(s):** Anya Boga

**School:** Oviedo High School, **Region:** Seminole

**Title:** In vitro Hexokinase and  $\alpha$ -amylase Inhibitory Activity of *Gymnema sylvestre* Extract to Identify Potential Anti-Diabetic Properties

**Students Name(s):** Aanvi Mathur

**School:** Orlando Science High School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Comparing Plasmonic Properties of Solid and Hollow Gold and Silver Nanoparticles for Early Diagnosis and Disease Detection

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**Second Place**

**Students Name(s):** Iris Fan

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** A Novel 3D-Printed Nerve Implant for Neuroglial Regeneration: Advancing Central Nervous System Recovery and Repair

---

**Students Name(s):** Kamilat B Mustapha

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** Targeting SLC3A2 Expression with Antisense Oligonucleotides to Overcome Cisplatin Resistance in Head and Neck Squamous Cell Carcinoma

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**First Place**

**Students Name(s):** Nathan Wei

**School:** Buchholz High School, **Region:** Alachua

**Title:** Novel Elastomeric Polystyrene via Photopolymerization and Post-Functionalization of Durable Ultra-High Molecular Weight Perfluorostyrene Copolymers

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**Grand Award Winner**

**Students Name(s):** Nathan Wei

**School:** Buchholz High School, **Region:** Alachua

**Title:** Novel Elastomeric Polystyrene via Photopolymerization and Post-Functionalization of Durable Ultra-High Molecular Weight Perfluorostyrene Copolymers

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## Senior

## Earth & Environmental Sciences

### Recognition

**Students Name(s):** Isabella Medina

**School:** TERRA Environmental Research Institute, **Region:** South Florida

**Title:** Assessing the Potential of Mosquitofish and Aquaponic Farming

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**Students Name(s):** Emaad Rahmathulla; Joshua Kim; Benjamin Burk

**School:** Ponte Vedra High School, **Region:** St. Johns

**Title:** Testing the Effects of Ethephon on Bacteria in Fresh Surface Water

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**Students Name(s):** Jayda Holman

**School:** Satellite High School, **Region:** Brevard: Intracoastal

**Title:** Enhancing Coastal Ecosystems and Water Quality: Utilizing Montmorillonite Clay Structures for *Crassostrea virginica* Restoration and Advanced Filtration Systems

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**Students Name(s):** Emma P Schaff

**School:** Melbourne High School,, **Region:** Brevard: Mainland

**Title:** The Effects of Ocean Acidification on Calanoid Copepods

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### Honorable Mention

**Students Name(s):** Alexander Ewy

**School:** Aubrey Rogers High School, **Region:** Collier

**Title:** The Green Lungs: Unmasking Plants' CO2 Efficiency by Measuring How Quickly Local Species can Remove CO2

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**Students Name(s):** Sunny You

**School:** Miami Palmetto Senior High School, **Region:** South Florida

**Title:** An Artificial Intelligence Tool for Intensity Estimation of Global Tropical Cyclones

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**Students Name(s):** Swara Patel

**School:** Carrollwood Day School, **Region:** Hillsborough

**Title:** Experimental Investigation of Phytodesalination and Growth Rate of Duckweed (*Lemna minor*) in Salt Water Hydroponics

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**Students Name(s):** Fatima Bourgi

**School:** Tavares High School, **Region:** Lake

**Title:** What Is the Effect of Zinc Oxide in Sunscreen on Aquatic Life?

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### Fourth Place

**Students Name(s):** Maiah Sofia Ahrens

**School:** Palm Beach Central High School, **Region:** Palm Beach

**Title:** A Comparison of Catalyst and Bioremediation for Perchlorate Removal in Martian Regolith

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**Students Name(s):** Ella R. Kilman; Jaya R. Vernese

**School:** Vero Beach High School, **Region:** Indian River

**Title:** How Do Microplastics Affect the Germination of *Rhizophora mangles*?

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**Students Name(s):** Ahmed Eldeeb; Salsabeel Eldeeb

**School:** Spruce Creek High School, **Region:** Tomoka

**Title:** Enhancing Carbon Sequestration of Sedium Acre by Integrating Silica-Composited Biochar: A Sustainable Approach to Mitigate Climate Change

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**Students Name(s):** Jackson W. Holcomb  
**School:** Okeechobee High School, **Region:** Heartland  
**Title:** Growing More With Less: Determining the Application Frequency of Microbes on Sod - 2-Year Study

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**Students Name(s):** Marco A Chua  
**School:** Stanton College Preparatory School, **Region:** Northeast Florida  
**Title:** Wave Force Dissipation: Year Three

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**Students Name(s):** Tristan Pasquale  
**School:** Wiregrass Ranch High School, **Region:** Pasco  
**Title:** ForestCast: Developing a Novel Convolutional Neural Networks to Enhance Prevention of Fragmentation in the United States

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### Third Place

**Students Name(s):** Nakul Balaji  
**School:** Florida Atlantic University High School, **Region:** Palm Beach  
**Title:** Exploring the Effects of Aquatic Phytoremediation on Excessive Nutrients Using *Lemna minor*

---

**Students Name(s):** Rhea Bagchee  
**School:** Seminole High School, **Region:** Seminole  
**Title:** Evaluating Microplastic Pollution in the St. John's River: A Multi-County Analysis and Exploring Novel Ferrofluid Remediation Approaches

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**Students Name(s):** Alynza I McBride  
**School:** South Sumter High School, **Region:** Big Springs  
**Title:** Tree Rings as a Potential Monitoring Tool for Saltwater Intrusion

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**Students Name(s):** Annika Schnetker  
**School:** Sarasota High School, **Region:** Sarasota  
**Title:** The Ideal Light Cycle for *Dunaliella salina*

---

**Students Name(s):** Katherine McCracken; Anika Sackerlotzky  
**School:** Sarasota High School, **Region:** Sarasota  
**Title:** The Effect of ABA Exposure to *Karenia Brevis* on Brevetoxin Production

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### Second Place

**Students Name(s):** Yashwin Adusumilli  
**School:** Florida Atlantic University High School, **Region:** Palm Beach  
**Title:** Implementation of *Gracilaria* as a Biofilter for Nutrient Pollution

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**Students Name(s):** Kevin Perez  
**School:** Crooms Academy of Information Technology, **Region:** Seminole  
**Title:** Optimized Predictive Model for Sea Surface Anomalies; Predicting El Niño Occurrences Using Neural Networks

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**Students Name(s):** Lorenzo V Pulmano  
**School:** American Heritage School, Plantation, **Region:** Broward  
**Title:** Improvements to the CNN Ensemble for Predicting Eyewall Replacement Cycles

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### First Place

**Students Name(s):** Anabella Platt  
**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida  
**Title:** 3D-Printed Hemp-based Artificial Coral Reefs as Biodegradable Solution for Marine Restoration

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**Students Name(s):** Abhith Kasala

**School:** Gainesville High School, **Region:** Alachua

**Title:** Global Microplastic Pollution- The Emerging Health Crisis: The Ecotoxicological Effects of Microplastics on Aquatic Organisms and Translating to Humans via A.I Machine Learning and A Novel Low Cost Water Filtration System

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**Grand Award Winner**

**Students Name(s):** Anabella Platt

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** 3D-Printed Hemp-based Artificial Coral Reefs as Biodegradable Solution for Marine Restoration

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## Senior

## Engineering

### Recognition

**Students Name(s):** Joseph Hadad; Manish Kota

**School:** Creekside High School, **Region:** St. Johns

**Title:** Cyclic Ionic Propulsion Design for Improved Thrust to Area Capacity

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**Students Name(s):** Everett M Dumolien

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** An Investigation of Forward Swept Variable Sweep Wings for Use on Military Unmanned Aerial Vehicles

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**Students Name(s):** Angel Zheng

**School:** Ridgeview High School, **Region:** Clay Rotary

**Title:** Waterproofing and Experimentation of Servo Motors: Obstructing Water Intrusion in the SG90 Servo Motor and Muizei 25KG Servo Motor in Submarine Robotics Needing to Achieve Angles of 90, 180, and 270 While Utilizing Programming Language C and the Arduino Programming Integrated Development Environment Running on Raspberry Pi

### Honorable Mention

**Students Name(s):** Siddhartha Gadamsetti

**School:** Suncoast High School, **Region:** Palm Beach

**Title:** Optimizing Flash Graphene Manufacturing Technology for the Harvesting and Utilization of the Martian Atmosphere: An In-SITU Resource Utilization Study.

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**Students Name(s):** Julisha I Jean-Jacques

**School:** Bayside High School, **Region:** Brevard: South

**Title:** The Touchless Instrument

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**Students Name(s):** Alexander Chindris

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Hollow Organ Simulator for In-Vitro Testing

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**Students Name(s):** Kaedin S Delaney

**School:** Melbourne High School,, **Region:** Brevard: Mainland

**Title:** Creating a Novel Form of Plasma Jet Engine

### Fourth Place

**Students Name(s):** Pranav Ponnusamy

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** 3rd-Eye: A Novel Embedded Suite of Drive Attentiveness Monitoring Tools Using Machine Learning (Year 3)

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**Students Name(s):** James Jiang

**School:** Buchholz High School, **Region:** Alachua

**Title:** Engineering Bioinspired Smart Sensors

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**Students Name(s):** Andrew Lambert

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Developing a Modified Quasi-Z Source Inverter with a Widened Triple Port to Decrease Voltage Loss Between Electric Vehicle Lithium-Ion Batteries and Electric Stability Control Systems: A Year Two Approach

**Students Name(s):** Ashna Mathur

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Biodegradable Magnesium-Based Implants for Bone Repair: Corrosion Properties of Different Magnesium-Based Samples (Year 2)

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**Students Name(s):** Bianca Trope

**School:** Community School of Naples, **Region:** Thomas Alva Edison

**Title:** Developing an Oil Spill Remediation System that Utilizes Ferrofluids' Polar-Incongruencies to Bind to Petroleum and Integrate it into a System Primed for Magnetic Removal versus Bagasse, Coconut Coir, and Pine Shaving Remediation Systems for Sustaina

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### Third Place

**Students Name(s):** Aneesh Sattiraju

**School:** Creekside High School, **Region:** St. Johns

**Title:** Design of an Axial Flux-Modulated Magnetic Coupler for Efficient Energy Conversion

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**Students Name(s):** Mikhail D Abraimov

**School:** Lawton Chiles High School, **Region:** Capital

**Title:** Calculation of Bike Route Distance Using Concept of Fractal Dimension

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**Students Name(s):** Dylan L Schwartz

**School:** The Bolles School, **Region:** Northeast Florida

**Title:** 3D Printed Micro-Optics: A Low-Cost Method to Produce High-Resolution Microscopy

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**Students Name(s):** Aadi Bhensdadia

**School:** Pine View High School, **Region:** Sarasota

**Title:** Utilizing 3D Additive Biomanufacturing to Develop a Biocompatible, Customizable, and Durable Mechanical Aortic Valve - Year 2

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### Second Place

**Students Name(s):** Dishika Parikh

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** A Novel Application of a Lateral Flow Immunoassay to Develop a Non-Invasive and Rapid Whole Blood Diagnostic Method for Alzheimer's Disease

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**Students Name(s):** Sophia M Weiner

**School:** Holy Trinity Episcopal Academy, **Region:** Brevard: Mainland

**Title:** Detecting Myofascial Tightness in Order to Reduce Undiagnosed Pain - Year 2

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### First Place

**Students Name(s):** Calvin T Mathew

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** Continuous Hemodynamics Monitor: Novel Smart Sensor for Real-Time Postoperative Cardiac Care

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## Senior

## Environmental Engineering

### Recognition

**Students Name(s):** Youssef Alhamzawi; Ibrahim Mohammad; Zainulabdeen Al-Qassab

**School:** American Youth Academy, **Region:** Hillsborough

**Title:** Automated Hydration: An Intelligent System for Optimizing Plant Growth through Soil Moisture

---

**Students Name(s):** Calina Levy

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Innovative Nonmicrobial Reduction of Nitrate into O<sub>2</sub> and N<sub>2</sub> for Commercial Availability

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**Students Name(s):** Zoe E. Orange

**School:** Paxton High School, **Region:** East Panhandle

**Title:** επαναφ?ρω A Natural and Cost-Effective Process of Bioremediation for Contaminated Soils.

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### Honorable Mention

**Students Name(s):** Jordan Platt

**School:** Spruce Creek High School, **Region:** Tomoka

**Title:** An Investigation of an Alternative Method of Mangrove Propagation to Facilitate Phytoremediation and Maximize Carbon Sequestration

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**Students Name(s):** Christopher D Estevez

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Advancement in Autonomous Research Vessel Technology: Design and Construction of a Shallow Water Collection Model

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**Students Name(s):** Zack J. Hirschinger

**School:** Magnet Innovation Center, **Region:** East Panhandle

**Title:** How the Angle and Indentation of a Hydroelectric Turbine Affects the Power Generated

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### Fourth Place

**Students Name(s):** Samhita Konuru

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** A Novel Application of Microfluidics and Coral for the Development of a Carbon Capture and Storage Device

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**Students Name(s):** Nat Bagnall

**School:** Ponte Vedra High School, **Region:** St. Johns

**Title:** Green Synthesis of a ZnO@ZIF-90 Nanozyme for CO<sub>2</sub> Capture

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**Students Name(s):** Raami Abichou

**School:** Lawton Chiles High School, **Region:** Capital

**Title:** Detection and Localization of Methan Emissions

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**Students Name(s):** Lillian Thoburn

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Hole Transport Materials in Perovskite Solar Cells

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### Third Place

**Students Name(s):** Bhav Jain

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Synthesizing and Testing a Cost and Energy-efficient Bioplastic out of *Sargassum bacciferum* seaweed algae, Glycerin, and Ethyl Cyanoacrylate (Superglue).

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**Students Name(s):** Gargi Sudhanva Paranjape

**School:** Oviedo High School, **Region:** Seminole

**Title:** Coagulation & Flocculation Coupled with Ion Exchange (IX) as an Alternative to Biologically Active Filtration (BAF) & Ozone for Direct Potable Reuse

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**Students Name(s):** Sharanya S Natarajan

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** An Integrated Algae Mitigation System to Seek & Abate Harmful Algal Blooms (Year 5)

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## Second Place

**Students Name(s):** Aswath Rajesh

**School:** Viera High School, **Region:** Brevard: Mainland

**Title:** BioRegen Polymer: Transforming Seafood Industry and Paper Waste into Biodegradable Polymers

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**Students Name(s):** Amaya Etcheverry

**School:** Community School of Naples, **Region:** Thomas Alva Edison

**Title:** Utilizing a Consortium of *Haematococcus*, *Spirulina*, and *Chlorellavulgaris* to Create an Open System Photobioreactor that Generates Electricity, Reduces Galvanic Corrosion of the Electrodes, And Maintains the Ability of the System to Purify Air (A 4th Year Study)

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## First Place

**Students Name(s):** Tiffani Gay

**School:** Orlando Science High School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:**

Year II: Resistant Electromagnet Propulsion for Petroleum Removal Employing Biocompatible Magnetorheological Fluid in Oil Spill Applications

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## Senior Intelligent Machines, Robotics, & Systems Software

### Recognition

**Students Name(s):** Carson Granese

**School:** Shorecrest Preparatory School, **Region:** Pinellas

**Title:** Overcoming Microgravity's Effects on the Lymphatic System During Long Term Space Travel

**Students Name(s):** Rohil Agarwal

**School:** Land O'Lakes Senior High School, **Region:** Pasco

**Title:** Assessing Academic Performance: Personalized Federated Learning for Identifying Overperforming and Underperforming Schools and Individual-Level Implications

**Students Name(s):** Jasmin Gaines

**School:** East Ridge High School, **Region:** Lake

**Title:** Manage Your Pet's Data From Any Device, Anywhere In The Cloud with Pet Tracker ID (Year 2)

### Honorable Mention

**Students Name(s):** Ioana L Silaghi

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Red Light, Green Light: Adaptive Traffic Signal Preemption for Emergency Vehicles

**Students Name(s):** Miguel Secillano

**School:** Vanguard High School, **Region:** Big Springs

**Title:** TALK- An American Sign Language Computer Program

**Students Name(s):** Charley Kennedy

**School:** Satellite High School, **Region:** Brevard: Intracoastal

**Title:** Revolutionizing Flood Prediction: Quantum Machine Learning for Spatial Modeling

### Fourth Place

**Students Name(s):** Eoghan McIvor

**School:** Florida Atlantic University High School, **Region:** Palm Beach

**Title:** Optimizing Thruster Layout on an Underwater ROV

**Students Name(s):** Lucas Sarabjit; Gabriel Sarabjit

**School:** Melbourne High School,, **Region:** Brevard: Mainland

**Title:** Developing an Infrastructure to Monitor, Record, and Evaluate the Condition of Storm Drains for the Prevention of Pollutant Runoff

**Students Name(s):** Selena Shen

**School:** Pine View High School, **Region:** Sarasota

**Title:** Detection of Diabetic Retinopathy with a Deep Learning Algorithm

**Students Name(s):** Curt Wheeler

**School:** Sarasota High School, **Region:** Sarasota

**Title:** Collaborative Neural Networks for Enhanced Anomaly Detection in Surveillance

**Students Name(s):** Dhruva Sharma

**School:** Fort Myers High School, **Region:** Thomas Alva Edison

**Title:** Intelligent Urban Transportation Revolution: A Comprehensive Approach Integrating Vision-based Traffic Analysis, SPSA-NN Traffic Signal Optimization, Distracted Driver Detection, and Enhanced Road Signaling

**Third Place**

**Students Name(s):** Meghna Vikram

**School:** Hagerty High School, **Region:** Seminole

**Title:** Who Makes the Rules?: Using Generative Artificial Intelligence to Write Novel Rules to Effectively Find Previously Unnoticed Security Vulnerabilities in Open Source Code

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**Students Name(s):** Ethan Thomas

**School:** Ransom Everglades School, **Region:** South Florida

**Title:** Syncardia: AI at the Heart of Early Cardiovascular Disease Detection

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**Students Name(s):** Rudra Patel

**School:** Middleton High School, **Region:** Hillsborough

**Title:** RYDRAfold: A Novel End-to-End Deep Learning Pipeline for Ab Initio Coarse-Grained RNA Tertiary Structure Prediction from Single Sequence Input

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**Students Name(s):** Varun Singh

**School:** South Fork High School, **Region:** Martin

**Title:** A Novel Approach to Waste Recycling with Robotic Force Sensing and Image Processing Using Deep Convolutional Neural Network

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**Second Place**

**Students Name(s):** Darren Lau

**School:** Berkeley Preparatory School, **Region:** Hillsborough

**Title:** Enhancing Color Contrast and Perception via Novel Dynamic Augmented Reality and Deep Learning Systems to Develop an Adaptable Aid for Color Vision Deficiencies

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**Students Name(s):** William C Wakefield

**School:** Pine Crest School, **Region:** Broward

**Title:** Variational Autoencoder as a Robust Clinical Classification Tool for Dementia

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**First Place**

**Students Name(s):** Colin Briggs

**School:** Gulf Coast High School, **Region:** Collier

**Title:** ArrowHead a Deep Learning Logic, Operationally Improved Standard for Java Space/Time Complexity Throughout Using O Notation Metaphysical Algorithm Derivations

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## Senior

## Mathematics & Computational Sciences

### Recognition

**Students Name(s):** Elizabeth N Butterfield

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Using a Random Forest Regression Method to Predict the Movement of Mangrove Trees in Florida

**Students Name(s):** Arnav Jain

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** Using Novel Mathematical and Computer Simulation Methodologies to Develop an Ocular Injury Prevention Apparatus

### Honorable Mention

**Students Name(s):** William R Rosenberg

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Utilizing Stochastic Differential Equations to Model and Predict Temperature Fluctuations

**Students Name(s):** Neha Harish Patil

**School:** Lake Highland Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Frequency Domain Analysis of Unipolar Electrograms Identifies Presence of Mid-Myocardial Fibrosis, Year III

### Fourth Place

**Students Name(s):** Eshan Vipuil

**School:** West Shore Junior/Senior High School, **Region:** Brevard: South

**Title:** Designing a Web App to Visualize 3D Blood Flow Patterns in Cerebral Aneurysms

**Students Name(s):** Luke Xue

**School:** Buchholz High School, **Region:** Alachua

**Title:** A Single Image Geometric Reconstruction for Robotics in Assisted Living

**Students Name(s):** Shreyashi Bodaka

**School:** Strawberry Crest High School, **Region:** Hillsborough

**Title:** CoMPHI: A Novel Composite Machine Learning Model Utilizing Multiple Feature Representation to Predict Hosts of Bacteriophages

### Third Place

**Students Name(s):** Anika Prasad

**School:** Strawberry Crest High School, **Region:** Hillsborough

**Title:** Automatic Diagnosis of Breast Cancer Using Deep Learning

**Students Name(s):** Meghna Manjith

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Investigating Biofilm-Related Biomarkers to Predict Therapy Response in Colorectal Cancer Tumors: Year 2

**Students Name(s):** Aurora J. Mendenhall

**School:** Niceville High School, **Region:** East Panhandle

**Title:** International Math Sign Language (IMSL): Standardizing a "Universal Language" for the Deaf Community

### Second Place

**Students Name(s):** Annika M Sachdeva

**School:** Pine Crest School, **Region:** Broward

**Title:** Utilization of Weighted Normalization to Improve Medical MNIST Disease Classification with a ResNet18

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**First Place**

**Students Name(s):** Sophia Rong

**School:** Buchholz High School, **Region:** Alachua

**Title:** The Role of Cell-to-cell Transmission in HIV Infection: Insights from a Mathematical Modeling Approach, Year 2

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**Grand Award Winner**

**Students Name(s):** Sophia Rong

**School:** Buchholz High School, **Region:** Alachua

**Title:** The Role of Cell-to-cell Transmission in HIV Infection: Insights from a Mathematical Modeling Approach, Year 2

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## Senior

## Microbiology

### Recognition

**Students Name(s):** Jennifer Grace Han

**School:** Palm Beach Central High School, **Region:** Palm Beach

**Title:** The Effect of Phycocyanin on the Bio-fabrication of Antibacterial Performance of Silver Nanoparticles

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**Students Name(s):** Isabella Lala

**School:** Gulf Coast High School, **Region:** Collier

**Title:** Bacterial Resistance

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**Students Name(s):** Alana N. Wyckoff

**School:** Hardee Senior High School, **Region:** Heartland

**Title:** Do Natural Antibiotics Work Better than Synthetic Antibiotics?

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### Honorable Mention

**Students Name(s):** Sarah Gutierrez

**School:** Sarasota High School, **Region:** Sarasota

**Title:** The Comparative Effect of Differing Minerals Against *Staphylococcus aureus* and *Escherichia coli*

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**Students Name(s):** Josephine Byers

**School:** Community School of Naples, **Region:** Thomas Alva Edison

**Title:** Developing Homeopathic Solutions to Minimize Antibiotic Resistance to Tetracycline Through the tetB and tetM Genes Along With 3 Other Commonly Used Antibiotics (2nd Year Study)

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### Fourth Place

**Students Name(s):** Kayli Harris

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effect of Telomerase Inhibitor IX in Conjunction with *Bacillus subtilis* and/or *Escherichia coli* k-12 on Pancreatic Cancer Cells as a Cancer Therapy

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**Students Name(s):** Julia Cohen-Pinsky

**School:** Satellite High School, **Region:** Brevard: Intracoastal

**Title:** Assessing the Antimicrobial Properties of Melittin on *Escherichia coli*, *Staphylococcus epidermidis*, *Fusobacterium*, and *Bacillus* Strains of Bacteria Creating a Pseudo Microbiome and its Overall Impact on HER2-enriched SK-BR-3 Breast Cancer Cell Spheroids

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**Students Name(s):** Michael Hemingway; Casey Ayres; Savin Karki

**School:** Newsome High School, **Region:** Hillsborough

**Title:** Using Locally Sourced Microbes to Develop a Novel Method of Sustainable Treatment

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**Students Name(s):** Mahie Mangesh Patil

**School:** Orlando Science High School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** A Novel Biodegradable Sorbent for Oil Spills, Year 2

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### Third Place

**Students Name(s):** Chloe Barreto-Massad

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Isolating and Annotating Novel Bacteriophages that Infect *Gordonia rubripertincta*: A Comparison between Evergreen22 (Frib8) and KayGee

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**Students Name(s):** Noah-Duro C Andre

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** Isolating, Screening, and Identifying Bacteria and Fungi Found Within Mangrove Soil In South Florida for Accessible Antimicrobial Natural Products

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**Students Name(s):** Anagha L Iyer

**School:** American Heritage School, Plantation, **Region:** Broward

**Title:** A Novel Approach to Wastewater Spill Remediation: Isolation, Identification, and Encapsulation of Bacteriophages for Pathogen Mitigation

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**Second Place**

**Students Name(s):** Rishit A Shaquib

**School:** Vanguard High School, **Region:** Big Springs

**Title:** Next-Generation Antibiotics: Isolating and Screening Novel Bacteriocins

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**First Place**

**Students Name(s):** Avi Amit Gupta; Jai Amit Gupta

**School:** Seminole High School, **Region:** Seminole

**Title:** Combating Superbugs: Natural Compounds as Downregulators of Biofilm Formation by ESKAPE Pathogens - An In Silico Study

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**Grand Award Winner**

**Students Name(s):** Avi Amit Gupta; Jai Amit Gupta

**School:** Seminole High School, **Region:** Seminole

**Title:** Combating Superbugs: Natural Compounds as Downregulators of Biofilm Formation by ESKAPE Pathogens - An In Silico Study

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## Senior

## Physics & Astronomy

### Recognition

**Students Name(s):** Ruby Lily Aubin

**School:** Florida Atlantic University High School, **Region:** Palm Beach

**Title:** RUBES: Resonators Used In Building Emergency Sensors - Factoring in Quality

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**Students Name(s):** Harsh Mehta

**School:** F. W. Springstead High School, **Region:** Hernando

**Title:** Stastical Analysis to Determine the Correlation Between Exoplanet's Metallicities and Parameters

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**Students Name(s):** Austin C Hallett

**School:** Clay High School, **Region:** Clay Rotary

**Title:** Ionic Wind: A Novel Approach for Generating Thrust Utilizing Electric-Powered Propulsion

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### Honorable Mention

**Students Name(s):** Tanzeela Tasneem

**School:** Florida Atlantic University High School, **Region:** Palm Beach

**Title:** Solar Sailing: Effects of Photophoretic and Optical Propulsion on the Movement of Mylar Based Compounds

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**Students Name(s):** Arvid Vaidyanathan

**School:** Winter Springs High School, **Region:** Seminole

**Title:** Dust-Repellent and Self-Cleaning Coatings for Solar Panels on Earth, the Moon, and Mars (Year Two)

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**Students Name(s):** Alexandra Beatriz Eary

**School:** Haines City High School IB East, **Region:** Polk

**Title:** What Is the Ringing?: Does the Density of Water in a Glass and the Glass Shape Affect Its Resonant Frequency

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### Fourth Place

**Students Name(s):** Nicholas Alexander Bondar

**School:** Alexander W. Dreyfoos School of the Arts, **Region:** Palm Beach

**Title:** Dipole Tension: The Impact of Source Positional Uncertainties

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**Students Name(s):** Jose Carvajal-Beltran

**School:** Wildwood Middle High School, **Region:** Big Springs

**Title:** Analysis of Optimal Rotor Shape: Year 3

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**Students Name(s):** Ian Kim

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** A Re-Engineering of the PID Controller Using a Novel 10-MF Fuzzy Logic Module for Regulating the Electromagnetic Force in Magnetic Levitation (Maglev) Vehicles

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**Students Name(s):** Jerry Chen

**School:** Trinity Preparatory School, **Region:** Dr. Nelson Ying Expo - Orange

**Title:** Fabrication of Superhydrophobic Materials Through Femtosecond Laser Ablation

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**Students Name(s):** Sofia E Teifeld; Tyler E Greene

**School:** NSU University School, **Region:** Broward

**Title:** Securing Hydrocephalus Shunt Systems: Investigating the Faraday Cage's Influence on Electromagnetic Field Study

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**Third Place**

**Students Name(s):** Catherine Xinyi Zhao

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** Chlorine-emulsified PDMS for Water Droplet Based Energy Harvesting

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**Students Name(s):** Deshna Pal

**School:** Strawberry Crest High School, **Region:** Hillsborough

**Title:** Unleashing Mysterious Waves: An Approach toward Gravitational Waves' Parameter Estimation Using Bayesian Inference and Deep Neural Networks

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**Students Name(s):** Enzo B Carter

**School:** Melbourne High School,, **Region:** Brevard: Mainland

**Title:** Comparing the Amount of Noise in Quantum Computers and Entangled Photons Produced by Spontaneous Parametric Down-Conversion when Producing Bell States

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**Second Place**

**Students Name(s):** Cameron J Gehlman

**School:** Edgewood Jr/Sr High School, **Region:** Brevard: Intracoastal

**Title:** Effectiveness of Diurnal Passive Radiative Cooling Paint in Near Space Conditions

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**Students Name(s):** James W Egdorf

**School:** Viera High School, **Region:** Brevard: Mainland

**Title:** Developing an Applicable Design for Cylindrical Non-Contact Triboelectric Nanogenerators to Harvest Hydraulic Energy for Sensing and Detection (Year 5)

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**First Place**

**Students Name(s):** Peter W Lansing

**School:** Pine Crest School, **Region:** Broward

**Title:** Using LTE Modeling to Find Unique Molecular Tracers for Star Formation Processes in the Central Molecular Zone of the Milky Way

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**Grand Award Winner**

**Students Name(s):** Peter W Lansing

**School:** Pine Crest School, **Region:** Broward

**Title:** Using LTE Modeling to Find Unique Molecular Tracers for Star Formation Processes in the Central Molecular Zone of the Milky Way

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## Senior

## Plant Sciences

### Recognition

**Students Name(s):** Emma Jane Johnson

**School:** Hardee Senior High School, **Region:** Heartland

**Title:** Does the Concentration of Molasses Affect the Brix in Watermelons (*Citrullus lanatus*)? Year 4

**Students Name(s):** Brennan Butler

**School:** F.W. Springstead High School, **Region:** Hernando

**Title:** Evaluation of Soil pH Change Surrounding Halophytes in Pithlachascotee Estuarine Mangrove Forests

**Students Name(s):** Malia Brooke Alana

**School:** Coral Shores High School, **Region:** Monroe

**Title:** The Effect of Wastewater Treatment Plants Biproduct, Sludge, on Growth of *Rhizophora mangle*: A Scientific Exploration

**Students Name(s):** Madeleine Grussing

**School:** Wiregrass Ranch High School, **Region:** Pasco

**Title:** Optimizing a Novel Chitinase Induction Method as a Form of Natural Fungicide

### Honorable Mention

**Students Name(s):** Addison M. Logemann

**School:** St. Edward's High School, **Region:** Indian River

**Title:** Biodiversity Index of Species on Native Versus Non-native Milkweed Species

**Students Name(s):** Isabella Wenxiu Wang

**School:** Haines City High School IB East, **Region:** Polk

**Title:** Should Trees Melow-Tone-In for Citrus Greening?

**Students Name(s):** Alice I Largen

**School:** Episcopal School of Jacksonville, **Region:** Northeast Florida

**Title:** Effects of Zinc Sulfate on Tomato and Pinto Plants Infected With Tobacco Mosaic Virus

**Students Name(s):** Aahan Asthana

**School:** South Fork High School, **Region:** Martin

**Title:** Uncovering: Seasonal Variation In Algal Growth

### Fourth Place

**Students Name(s):** Devesh Kumaresh

**School:** American Heritage School of Boca/Delray, **Region:** Palm Beach

**Title:** The Effect of *Cladophora glomerata* on the Aggregation of Microplastics in Various Aquatic Environments

**Students Name(s):** Joshua Reynolds

**School:** Florida Atlantic University High School, **Region:** Palm Beach

**Title:** Exploring the Effectiveness of *Chenopodium quinoa* on Minimizing the Effects of Salt Stresses on *Brassica oleracea*

**Students Name(s):** Isabella Gonzalez; Leonardo Ravelo

**School:** iMater Preparatory Academy High School, **Region:** South Florida

**Title:** The Use of an Autonomous Sensing and Watering System to Optimize Water Use and Biomass Production in Misome (*Brassica campestris var.narinosa*)

**Students Name(s):** Ava Ehinger  
**School:** The Villages Charter High School, **Region:** Big Springs  
**Title:** Ozonated Water's Effect on the Quality of Common Green Beans

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**Students Name(s):** Summer Kaylyn Davies  
**School:** Strawberry Crest High School, **Region:** Hillsborough  
**Title:** The Effects of *Glomus intraradices* on Root Growth and Nitrogen Consumption of Italian Genovese Basil in the Kratky System

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### Third Place

**Students Name(s):** Brady J. Williamson  
**School:** Okeechobee High School, **Region:** Heartland  
**Title:** Money In the Bag: Investigating the Effectiveness of Oxytetracycline in Individual Tree Protectors vs Open Air Protection Against Huanglongbing In Four-Year-Old Valencia Orange Trees-A Three-Year Study

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**Students Name(s):** Ann Parry  
**School:** Countryside High School, **Region:** Pinellas  
**Title:** Hydroponic vs. Soil: The Optimal Growth Environment

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**Students Name(s):** Alina Zaidi  
**School:** Holy Trinity Episcopal Academy, **Region:** Brevard: Mainland  
**Title:** Silver Armor Against Bacteria: A Battle of Antimicrobial Effectiveness

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**Students Name(s):** Kurukulasuriya Fernando  
**School:** Dunbar High School, **Region:** Thomas Alva Edison  
**Title:** Comprehensive In Vitro and In Vivo Evaluation of Antidiabetic, Antifungal, Antioxidant, Larvicidal, Bioelectricity and Anticancer Activity of Six Native Plant Species: Innovations for Novel Drug Discovery

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### Second Place

**Students Name(s):** Ella Baum  
**School:** Saint Petersburg Collegiate High School, **Region:** Pinellas  
**Title:** Biological Control of Pests Using Entomopathogenic Fungi

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**Students Name(s):** Tanishka Aglave  
**School:** Strawberry Crest High School, **Region:** Hillsborough  
**Title:** Advancing Sustainable Citrus Greening Disease Management: A Comprehensive Eco-friendly Approach for the Management of *Candidatus Liberibacter asiaticus* Using Trunk Injection of *Murraya koenigii* Derived Biological Extract and its Validation through Precision Agriculture Tools

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**Students Name(s):** Anik Bora  
**School:** American Heritage School, Plantation, **Region:** Broward  
**Title:** Creating a Land Usage Model to Predict Optimal Crop Locations Using Convolutional Neural Networks

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### First Place

**Students Name(s):** Moitri Santra  
**School:** Oviedo High School, **Region:** Seminole  
**Title:** Combatting Huanglongbing Using Innovative Detection and Treatment Tools: Year 2

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### Grand Award Winner

**Students Name(s):** Moitri Santra  
**School:** Oviedo High School, **Region:** Seminole  
**Title:** Combatting Huanglongbing Using Innovative Detection and Treatment Tools: Year 2

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